

OUR

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POVERTY, HEALTH & THE ENVIRONMENT

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Poor health

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Gross natural product

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KLAUS TÖPFER

United Nations
Under-Secretary
General and Executive
Director, UNEP

Let me introduce you to George, gardener, father of three and Kenyan citizen.

Each day he brings home \$2.50, equivalent to \$60 a month for a six-day week. The family's biggest expense is fuel. Up to 20 per cent or nearly \$12 goes on charcoal and kerosene for cooking and lighting their meagre, one-bedroom house in a Nairobi slum.

The smoke from the cooking fires leaves him, his wife Grace and the three little ones with constant coughs and wheezes. But switching to gas or a cleaner fuel is unimaginable on George's scant wages.

Dining on air

Around \$13 a month is spent on rent. The rest is swallowed up by food and the occasional purchase of clothes. At lunchtime George dines on an 'airburger', as locals term it. Essentially he lies down for an hour in the nearest hedge and contemplates his life. The evening's fare, the one real meal of the day, consists of maize flour, fried chopped kale leaves known as *sukuma wiki*, and the occasional morsel of meat.

Editorial

The combination of poor diet, poor indoor air and contaminated drinking water means that George and Grace live in constant fear of disease. Days off work are frequent. Hospital bills are out of the question so if the pair or their children fall ill the only medicine available is prayer. George and Grace dream that one day they may have enough money to send their children to school so that, with education, they might be able to escape the vicious cycle of the poverty trap.

But like caring for the environment, this remains a dream for someone living on less than \$3 a day. George knows that the charcoal he burns has come from the unsustainable felling of forests. He can see the scarred landscape of the once heavily wooded Ngong Hills every day when he walks to work. George also knows that those forests are vital for keeping local rivers clean and flowing and for preserving wildlife. However, for the desperately poor, saving yourself comes before saving the planet.

There are billions of Georges and Graces across the developing world. You might deem them the lucky ones. It is estimated that half the world's population lives on less than \$2 a day with somewhere around a quarter consigned to absolute poverty on less than a dollar a day.

Each year 16 million people die of hunger and starvation. An estimated 800 million are malnourished.

About a billion people lack any health care and a similar number lack adequate shelter. More than a billion are without safe or sufficient quantities of drinking water and nearly a billion are illiterate. More than 2 billion do not have adequate sanitation.

UNEP is working hard to try to break the deadly links between health,

poverty and environmental damage. It has, for example, spearheaded the drive against chemicals hazardous to health, leading to the Convention on Persistent Organic Pollutants earlier this year. In cooperation with the World Meteorological Organization, it has established the Intergovernmental Panel on Climate Change, through which the world is becoming increasingly aware of the links between global warming, poverty and health.

But much more needs to be done. It will require dynamic partnerships between ourselves, other United Nations agencies and organizations, industry, governments, financial institutions and charities.

These issues will be at the heart of the World Summit on Sustainable Development taking place in Johannesburg next year. We must make a success of this or we will all be the poorer. We owe it to George and Grace and their family. We owe it to us all.

Common endeavour

This edition of *Our Planet* is dedicated to the poor all over the world and to our hope at UNEP that addressing the links between poverty, ill health and the environment can become a common global endeavour. For unless we tackle these links we will never get to many of the root causes of environmental degradation that threaten everyone's quality of life, be they rich or poor. As my colleague H. N. B. Gopalan, UNEP's Task Manager on Environment and Health, so rightly observes: 'You will never save and conserve important ecosystems, habitats and ultimately a healthy planet if on their edges you have poor, desperate, hopeless and unhealthy people.' ■



Answering POOR HEALTH

GRO HARLEM BRUNDTLAND outlines the links between poverty, health and the environment and recommends practical action

Twenty-four years ago, as a young environment minister in Norway, I was called out at midnight to be informed that there had been a blow-out in the Ekofisk field in the North Sea. After an intense week of crisis management, the well was capped and, luckily, the environmental damage was less than we had feared.

The Ekofisk blow-out in Norway

was a turning point for the Norwegian people and for its politicians. For the first time the environment was recognized as an issue belonging at the centre of the country's economic development. The blow-out was not only a threat to birds and coastline – even though this was serious enough. It was a threat to our whole development as a nation.

Meaningful societal change starts

when the economic impact of an issue is acknowledged and understood. During the 1980s, global recognition of the economic impact of environmental change meant that it became an issue of interest to world leaders and decision makers.

Through awareness raising by civil society and the media, the economic, political and social importance of environmental degradation has become an issue for voters, politicians and governments alike.

Since the 1980s there has been significant progress on environmental issues, with new global conventions, reduced pollution in many countries, and keen awareness of the value and importance of sound environmental policies.

There have also been less welcome developments. Emissions of carbon dioxide are increasing and current international actions are not sufficient



Zimbabwe: Kenanot/NIT/Topham

to prevent significant changes in climate and sea levels.

Over the past three years, we have seen a similar 'awakening' of public awareness to the importance of health in development.

Global alarm

Sadly, it has taken the HIV/AIDS epidemic to raise global awareness of the link between economic development and health. United Nations Secretary-General Kofi Annan asserts that 'AIDS can no longer do its deadly work in the dark. The world has started to wake up.' Frighteningly, it has taken 22 million deaths and more than 13 million orphaned children to act as a global alarm clock. Today, there are 36 million people living with HIV/AIDS.

One leader in the war against HIV/AIDS was a boy from South Africa named Nkosi Johnson.

Complications from AIDS took 12-year-old Nkosi's life in June of this year, but not before he put a human face on the tragedy that is the AIDS pandemic. Nkosi was one face, a poor child suffering from AIDS. Every one of the 36 million people suffering from HIV/AIDS is a human being who deserves our compassion, commitment and action.

Economic drain

Beyond the suffering, diseases such as AIDS, malaria, tuberculosis (TB) and many childhood diseases have a direct link to poverty. On an individual level, getting ill can mean economic ruin for the 3 billion people who already scratch a living on less than \$2 a day. On a national level, new research shows that diseases drain billions of dollars from the gross domestic products of developing countries.

To increase understanding about the relationship between health and development I formed the Commission on Macroeconomics and Health nearly two years ago. The Commission is due to produce its report at the end of the year, but it has already assembled powerful evidence indicating the sizeable role that health plays in determining the economic prospects of the world's poor communities.

The burden of HIV is a heavy one. HIV prevalence rates of 10-15 per cent – which are no longer uncommon and are considered low for some regions – can translate into a reduction of GDP per capita of up to 1 per cent per year. TB, which is exacerbated by HIV, takes an economic toll equivalent to \$12 billion from the incomes of poor communities.

Africa's GDP would probably be about \$100 billion higher now if malaria had been tackled 30 years ago, when effective control measures first became available. Today, half a billion cases of malaria each year lead to the loss of several billion days of productive work.

Both health and environmental issues are coming together in a unified demand for sustainable development policies. Unless we take drastic action over the next couple of years, negative environmental and health trends will together threaten the lives of billions

Health and environmental issues are coming together in a unified demand for sustainable development policies

of people on Earth through disease, environmental degradation and natural calamities.

As we look to the future we are presented with two radically different scenarios. The choice of which will become a reality depends on the level of global political commitment and action.

The first scenario is one of nightmare proportions. We could see the spread of HIV/AIDS, TB and malaria and the increase of antibiotic resistance to existing treatments. Climate change could lead to the spread of diseases such as malaria outside its tropical domain, and an increase in extreme weather and natural disasters would both kill and cause disease. We could also face increased food insecurity.

Sadly, this is where we are headed today if we do not take immediate and meaningful action.

Global investment

The second scenario is a real and positive alternative. It is one where the mortality of the main infectious diseases, including malaria, TB and HIV/AIDS is drastically reduced through concerted global investment in health. Where issues such as global warming and serious pollution are dealt with by forceful international action. Where global negatives, such as the use, sale and marketing of tobacco and other dangerous substances or products are dealt with through internationally negotiated regulation.

I am optimistic that we can and will choose the second alternative. The fundamental shift in thinking among world leaders and decision makers toward recognition of the causal connection between poverty, health and the environment has led to positive action being taken at the highest levels of international decision-making. Leaders of developing and industrialized countries have joined together in ►

*Dr. Gro Harlem Brundtland is
Director-General of the World Health
Organization.*

**Equitable allocation
of water resources
provides an important
opportunity for social
and environmental justice**

Urban population growth is placing increasing pressure on existing systems. A recent DFID-funded study by the International Institute for Environment and Development shows the levels of per capita water use in East African cities almost halved between 1970 and 2000. Over the same period, average collection time for each trip increased from 9 minutes to 21 minutes. This time is taken from education, child care, cooking, fetching wood, paid labour and other livelihood activities that are part of poor people's survival strategies. Some 25 per cent now rely on small-scale providers, often paying a significant proportion of family income each month. Civil society organizations are playing an increasingly important role representing poor people's interests through advocacy, as well as direct provision of water.

Broader water resources issues are also highly relevant to poverty

elimination. To witness the full fragility of the human-water relationship one needs do little more than peer out of an airline window over the Nile valley. At 12,000 metres the thin green line – a basis for much of early human civilization – is the difference between prosperity and poverty for thousands of farmers, and the water supply for millions of urban dwellers.

Opportunity for justice

Managing water in an environment of such scarcity is a huge task. Poor households' survival options are very limited at times, and in places, of water scarcity. Highly vulnerable to economic and climatic shocks and with negligible access to finance, the drain on household livelihoods of poor water supplies is considerable. The burden is complex, immense and exhausting.

Equitable allocation of water resources provides an important

opportunity for social and environmental justice. This is the approach being taken by the Department of Water and Forestry in South Africa, with which DFID works closely. We are also supporting the Government of China to develop pro-poor water resources policies.

With water scarcity can also come conflict. At the local level disputes over water are played out daily. They may not grab the headlines, but local tensions and violence over access to water may be just as damaging and costly in terms of the impact on the livelihoods of the poor and the environment.

At a state level where the international stakes are much higher, the weight of conflict prevention measures is that much greater. It was the serious disagreements provoked by the growing threat of demands on the Nile waters that spurred the efforts of riparian governments and the World Bank to enter into a process leading to the Nile Basin Initiative. This substantial effort has very recently borne practical fruit in the form of the Nile Basin Action Plan – supported by a range of donors, including DFID. An excuse for conflict has been turned into a basis for cooperation, providing a hugely important example to other regions facing competition over water.

International targets

In seeking to develop solutions to the problems outlined, DFID attaches major importance to water in the struggle to eliminate poverty. We are focused on the international targets that will see the number of people without access to safe water and adequate sanitation halved by 2015, and national integrated water resources management plans in the process of implementation by 2025.

Our work in water is guided by the principles of putting people at the centre, responding to demand and recognizing the inherent economic value of water with costs attached to its provision.

Sustainable and affordable access is essential. Governments, civil society, the private sector and communities themselves all have vital roles to play. DFID's particular priorities, in ►



R. Le Moine/UNEP/Tropham



responding to the challenge, are to support activities that transform institutions – improving capacity and coordination at all levels, and bringing about greater transparency, accountability and political commitment, as well as increased involvement of the private sector and civil society. We seek to promote best practice in addressing water-related poverty, encouraging governments to adopt integrated and sustainable approaches, and improved emergency responses. We also recognize the importance of generating and sharing knowledge.

The priority for us all now is to move from global recognition of the problem – and a vision of how things should change – to local actions. We understand the problem and the dangers and we know how to move forward. We now need concerted implementation by all parts of the international development system ■

Clare Short is Secretary of State for International Development, United Kingdom.

Everything **CONNECTS**

THORBJÖRN JAGLAND describes the intimate interlinkages between poverty, health and the environment and sets out priorities for action

Nine years after the United Nations Conference on Environment and Development in Rio de Janeiro, the concept of sustainable development – that we must meet the needs of the present generation without compromising the ability of future generations to meet their own needs – has gained worldwide acceptance. There is increasing understanding that poverty and ill health are among the main driving forces behind environmental degradation and that a healthy environment is essential for good health and effective poverty alleviation.

Clearly, there can be no sustainable development without ensuring basic health services for all and giving people the means and opportunities to work their way out of deprivation and poverty.

This is why the interlinkages between poverty, environment and health should be at the centre of our attention at the World Summit on Sustainable Development in Johannesburg next year.

Health and the environment

We know that the environment in which people live significantly affects their health and the quality of their lives.

Environmental factors that have a negative influence on human health include:

- *Unsafe and scarce drinking water and inadequate sanitation.* It is estimated that more than 1 billion people do not have access to adequate supplies of clean water, and that 3 million people die every year of water-borne diseases. Around 90 per cent of malaria cases in the world are attributable to environmental factors.

- *Indoor and local air pollution.* Many of the world's households use unprocessed solid fuels for cooking and heating and have insufficient ventilation. It is estimated that 2 million people die every year as a result of exposure to indoor pollution. Local pollution also poses a health hazard in many large cities, and increased urbanization may lead to even greater health problems caused by environmental factors.

- *Food security (healthy food and long-term security of supply).* A healthy environment for food production is essential for a sustainable food supply and good nutrition. Food contamination is a growing problem. Organic chemicals and heavy metals that persist in the environment and accumulate through the food chain may have adverse effects on human health, leading to cancer, reduced fertility and neurological damage. Security of supply depends on conserving soil productivity and protecting genetic diversity, as well as on how the resources are used.

- *Global warming.* Climate and weather affect human health in many ways. The incidence of extreme weather is increasing. Storms, hurricanes and floods kill thousands of people every year and increase the risk of contaminated water.

These examples clearly illustrate the interlinkages between health and the environment. Both communicable and non-communicable diseases are highly influenced by environmental conditions. The World Health Organization reports that 25 per cent of all preventable illnesses are directly caused by environmental factors.

Poverty and the environment

The burden of health problems caused by environmental factors to a large degree rests on the shoulders of the poor. In fact, the overwhelming majority of the 3 million people who die every year from water-borne diseases are poor people. The 2 million people who die every year of indoor pollution are mostly poor children and women.

Recent estimates suggest that premature death and illness due to major environmental risks account for a fifth of the total burden of disease in the developing world. The disease burden from environmental risks is far less in rich countries.

While the poor are generally hit the hardest by environmental degradation, poverty itself is also a main factor behind the continuing degradation of the environment that results from extreme population growth, deforestation and overexploitation of marginal land, mushrooming urbanization and production without cleaning technologies.

We cannot expect the poorest to work their way out of this poverty trap alone. Coherent international action is required.

Multi-sectoral approach*

Many determinants of environmental health are of a cross-border nature and can therefore only be dealt with on the basis of a common international understanding and commitment. Today it is particularly important to ensure the early ratification of the Cartagena Protocol on Biosafety to the Convention on Biological Diversity, the Kyoto Protocol to the United Nations Framework Convention on Climate Change and the recently concluded Convention on Persistent Organic Pollutants. The phasing out of the use of toxic and bio-accumulative chemicals is a prerequisite for securing safe food. Further global action in this field should focus on reducing health risks stemming from

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Global problems have been held hostage by the need for consensus

heavy metals. Norway has suggested that UNEP should initiate a global assessment process beginning with mercury and, as appropriate, other heavy metals that give cause for concern.

We must work together to identify an appropriate policy approach and develop comprehensive multi-sectoral strategies in the field of environmental health. The development of environmental health policy tools to ensure the mainstreaming of environment and health concerns in all sectors should be encouraged. Moreover, strategic and health impact assessments, improved risk management, development of a better knowledge base on the interlinkages between poverty, health and the environment, and better education are all measures that should be further expanded and developed.

Norway gives priority to supporting the developing countries' efforts to improve environmental conditions and human health and supports effective implementation of international conventions and rules. Concrete measures to combat environment-related health problems must be based on local conditions and priorities. Within our development assistance programmes, improved sanitation and water services are given priority along with improved energy services to poor households. Cleaner production initiatives to improve local air quality are also prioritized. Measures in urban areas focus on improving the living conditions of the poorest segments with an emphasis on health and the environment.

Cooperation at every level
Global, national and local efforts for social progress and environmental protection must underpin each other. Since Rio, we have seen progress in many fields, particularly with regard to local and national initiatives. Too often, however, global problems have been held hostage by the need for consensus. Regrettably, most states are reluctant to undertake obligations that go to the core of their economic life, regardless of the long-term benefits.

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The way the larger developing



Abstract—The purpose of this study was to determine the effect of a 10-week, 1000 kcal energy deficit diet on the body composition and physical fitness of obese women. The study was a randomized, controlled trial. The subjects were 20 obese women who were randomly assigned to either a diet or a control group. The diet group was instructed to consume a diet that was 1000 kcal less than their maintenance level. The control group was instructed to consume a diet that was equal to their maintenance level. The subjects were assessed at baseline and at 10 weeks. The diet group showed a significant decrease in body weight, body fat, and waist circumference. The control group showed no significant changes. The diet group also showed a significant increase in physical fitness. The control group showed no significant changes. The results of this study suggest that a 10-week, 1000 kcal energy deficit diet is effective in reducing body weight, body fat, and waist circumference, and in increasing physical fitness in obese women.

countries grow, and the way they use natural resources, will affect the whole world. It is of the utmost importance to everyone that they use environmentally friendly technologies and management principles, and seek broad-based economic and social development. Communicable diseases, many of our most pressing environmental problems, and streams of refugees seeking a better life, represent challenges to every nation. They are truly international problems that can only be solved by joint international action.

If the long-term viability of human society is to be assured, we have to approach these problems based on common perceptions, and common responsibility and burden sharing. At the forthcoming summit in Johannesburg, we should coordinate our efforts for a better organized and more equitable global community. Only then can we succeed ■

Thorbjørn Jagland is Minister of Foreign Affairs, Norway.

UP the gross natural product

ANIL AGARWAL explains how community-based resource management can solve the ecological poverty afflicting the world's poor

High levels of 'ecological poverty' – defined as the lack of a healthy natural resource which is essential for human society's survival and development – are a key cause of the economic poverty of the world's rural poor. Conversely, healthy lands and ecosystems, when used sustainably, can provide all the economic wealth that is needed for healthy and dignified lives.

Ecological poverty is different from the economic poverty which modern economists revel in. As economic poverty is measured largely in terms of cash incomes, it is almost irrelevant in the biomass-based subsistence economy that supports most rural people. The approaches to dealing with ecological poverty and economic poverty are also vastly different. Economists normally talk of welfare measures to deal with economic poverty, but rural practitioners who have tried to deal with ecological poverty talk more of institutional, legal and financial empowerment with a strong emphasis on community-based property rights over ecological resources.

Basic necessities

According to the State of World Rural Poverty, produced by the International Fund for Agricultural Development (IFAD) in 1992, more than 2.5 billion of the some 4 billion people of 114 developing countries, lived in rural areas; approximately 1 billion of these below the poverty line. These people lack such basic necessities as safe drinking water, adequate food and health care. Almost a third of the people in the developing world have a life expectancy of just 40 years. The IFAD report says that less than half the rural population have access to safe drinking water, and even less to irrigation water to ensure sustained agricultural production. For these people, poverty is a denial of the most basic of all human rights: the right to life. The 'trickle-down approach' has either failed to reach them or has not worked well enough. The massive persistence of poverty, particularly in rural areas, represents a serious problem both for poor nations and for the global community. The problem

lies not only in the unintended consequences of the prevailing economic paradigm, but also in the viability of the paradigm itself.

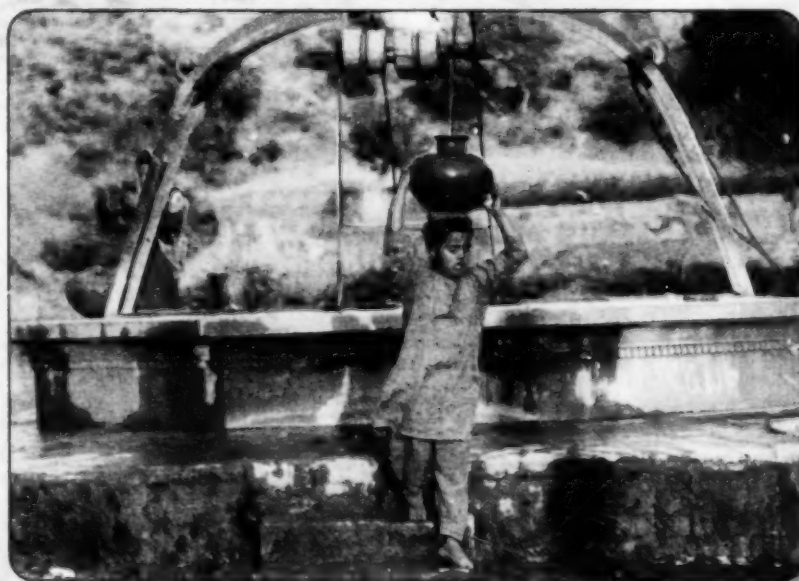
Though poverty and its relationship with the environment was recognized by the 1992 United Nations Conference on Environment and Development, action on the issue remains largely neglected. It is no accident that many poor rural people live in areas of extreme environmental fragility where ecological changes have led to natural resource degradation. A large portion of the world's rural poor now lives on highly degraded lands in China, South Asia, Africa and Latin America. For them, improvements in the gross natural product are far more important than improvements in the gross national product.

Ecological balance

Villages in the developing world are usually highly integrated micro-ecosystems. Each Indian village, for example, has its own croplands, grasslands, and tree or forest lands, and each of these land-use systems interacts one with the other. This entire village ecosystem is held in a fine ecological balance which can easily get split apart.

Over the 1980s, the ecological crisis in India has generated several outstanding community-based natural resource management initiatives. These show that community-based water management, aiming to harvest local rainwater, constitutes the key activity for initiating the restoration of the ecological and economic base of villages dependent on a biomass economy. Once water is available, croplands begin to produce more and become less susceptible to periods of low rainfall. Slowly, over time, animal-based production also begins to increase. Once people begin to manage their local water resources, they automatically begin to realize the importance of watershed protection.

The two villages that started this work in India in the late 1970s – Sukhomajri in Haryana and Ralegan Siddhi in Maharashtra – have today so increased their ecological





Kevin Lamar UNEP/Topham

wealth from agriculture, animal husbandry and forestry that they can earn \$1 million a year on a sustainable basis. What is remarkable is the short time – some three to four years – that it takes to transform a poverty-stricken, destitute and ecologically devastated village into a relatively well-fed and green one. This wealth can be multiplied by regularly investing in resource management, leading to a cyclical system of sustainable growth.

Positive action

There has been nothing more heartening in the last two decades of the environmental movement than the transformation that these communities have been able to achieve. Bureaucratic resource management systems have either failed or have proved to be cost-ineffective, making them irrelevant in a world where financial resources are limited.

When told this, people often ask in wonder: how much can you do with your local rainwater resources? The simple answer is: an amazing amount. Just consider this water arithmetic (unfortunately, hardly any modern water

resource experts seem to be aware of it). How much water would you get if you were to capture a mere 100 millimetres of rainfall – the amount that you get every year in Israel's bone-dry Negev – on 1 hectare of land? The answer is a million litres. Harvest all the rain that falls in your village and you will get not just enough water to drink, but also for life-saving irrigation. The result will be less poverty and improved food security and health.

This demands a fundamental change in current water management strategies. Two major discontinuities have emerged worldwide over the last 150-200 years. First, the state has emerged as the major provider of water, replacing communities and households as the primary units for providing and managing it. Second, there has been growing reliance on the use of surface water and groundwater; the earlier reliance on rainwater and floodwater has declined, even though they are available in much greater abundance than river water or groundwater. The growing water crisis of the 21st century is bound to force humanity to look at other ways of managing water resources, including going back to community-based water management using the technology of rainwater harvesting. The experiences cited above show that there is no need for doom and gloom unless we continue with the existing paradigm ■

There is no need for doom and gloom unless we continue with the existing paradigm

Anil Agarwal is the chairperson of the New Delhi-based Centre for Science and Environment (www.cseindia.org) and was a member of the World Water Commission.



From: Kenichiro Nishimura

Stopping AIDS

PATTY STONESIFER shows how AIDS discriminates against the poor and says that this is the pivotal moment for tackling the spread of the disease

Thirteen-year-old Claris Akinyi does not skip in the playground with her classmates any more; they will not play with her since her father died of AIDS. Of course, she has no time to play anyway, between caring for her mother, who is dying of AIDS, and supporting her four younger siblings with the dollar a day she earns selling corn.

Claris' story is heartbreaking, but it is not rare. Her mother will become one of 22 million who have died from AIDS, and the five children mourning her will join more than 13 million orphaned by AIDS – most of them desperately poor.

AIDS can strike anyone, no matter what their station in life. But in a powerful sense, AIDS discriminates against the poor – those without the information, the resources, or the

social leverage they need to protect themselves. Women are infected more than men, the poorest women most of all, and millions of mothers have tragically passed the AIDS virus to their children. Some 75 per cent of those living with AIDS – and 75 per cent of those who have died of AIDS – are African. And 95 per cent of all new infections occur in developing nations.

Global inequity

The Bill & Melinda Gates Foundation has looked carefully at the problem of inequity – in access to education, technology and economic opportunity – across race, countries and continents. But we have found no inequity more glaring and destructive than the inequity in global health. The developing world carries 90 per cent of the global disease burden, yet these

countries receive only 10 per cent of worldwide health resources.

The death of a child in the developing world is every bit as tragic as the death of a child in the United States, Europe or Japan; and those of us who were born in the developed world have a responsibility to help those who were not. From a practical point of view, we believe improving public health makes it easier to meet every other need, from higher literacy, to better education, to stronger economic growth and a more stable, prosperous society. That means that when low-cost, life-saving interventions are available anywhere, they ought to be available everywhere. And when an AIDS vaccine is developed, we must ensure that it is within everyone's reach.

The fight for a better future will be won or lost on the battleground of global health. If we can make the same gains against AIDS, tuberculosis and malaria that we have made in the past against smallpox, polio and other illnesses, we will literally save hundreds of millions of lives. And there is every chance that nations in Africa and elsewhere can make the same health and economic gains

achieved by more prosperous countries like the Republic of Korea. But if we cannot meet these health challenges, there is little chance for change. That is why we have made global health the top priority of the foundation, and why we have made stopping the transmission of AIDS the foundation's number one global health priority.

This is a pivotal moment. The 36 million people infected with AIDS could quickly become 100 million. It depends on what we do today. The foundation is working to fight AIDS in five ways, by:

- **Supporting the development of an AIDS vaccine.**
- **Promoting education and prevention, particularly among those at high risk of infecting others or becoming infected with HIV, including commercial sex workers and intravenous drug users.**
- **Developing new and effective microbicides that allow women to protect themselves even if their partners will not.**
- **Supporting comprehensive approaches that reduce the spread of AIDS by increasing awareness, prevention, diagnosis and treatment.**
- **Helping communities care for children orphaned by AIDS.**

Naturally, any goal as bold as stopping the transmission of AIDS draws sceptics, who point to the raging epidemic in Africa and surging infection rates in India, the Caribbean, China and the former Soviet Union. But those numbers are merely evidence that the task will be difficult, not proof that it is impossible.

For the first time in 20 years, the excuses for ignorance and inaction are gone. AIDS is now debated in the world's great forums. Kofi Annan's leadership has given us – through the Global AIDS and Health Fund – a

Increased investment is needed to accelerate research...

vehicle for measuring our financial commitments against the scale of the crisis. Governments, non-governmental organizations, corporations, multilateral organizations, and the top medical minds in the pharmaceutical companies and research laboratories, are fighting together on the same side for the same cause for the first time in history.

Successful prevention efforts are now under way in many countries. Each nation has its own social mores that can make prevention difficult to discuss. Yet courageous leaders are taking political risks to defy old taboos, push bold plans, end old stigmas and make dramatic improvements in the health of their nations.

In Thailand, Prime Minister Thaksin's strong support of public health efforts to develop an HIV/AIDS surveillance system and a sustained public awareness effort – including the '100 per cent condom use' campaign for commercial sex – cut infection rates of 21-year-old military conscripts by two thirds. A programme to test and treat women for HIV reduced the risk of mother-to-child transmission by two thirds.

Fighting back

Senegal, under the leadership of President Wade, has kept HIV prevalence at 2 per cent with intensive condom promotion, treatment of sexually transmitted infections (STIs), and success in delaying the age at which young women first have sex.

Uganda used to be one of the world's examples of the hopelessness of AIDS. Today, it is an inspiring model of how to fight back. A broad-based national effort backed by President Museveni emphasizing condom use, counselling and testing, and STI self-treatment kits has dropped the overall adult HIV prevalence by nearly half, from 14 per cent to 8 per cent, in ten years.

In Mozambique, Prime Minister Mocumbi has spoken out with stunning candour about practices that speed the spread of AIDS, and the need to change habits in order to change the future. He freely admits it is 'slow, painstaking work', but that 'surely, our children's lives are worth the effort'.

The world has not covered itself in



glory during the first 20 years of the AIDS epidemic. We underestimated the disease, millions died, and millions more are in danger. We now know what is at stake. We know what it will take.

Donor governments must increase the investments they have made to date as part of a worldwide effort to devote unprecedented levels of resources to global health. This will require 'new' money, and not simply a shift of resources where funds for AIDS take from funds for malaria. Developing nations must follow the examples set by leaders such as President Joaquim Chissano of Mozambique who, during his term, has doubled that nation's health budget. Dollars must flow to effective, proven interventions that target high-risk groups who can limit transmission of the virus if they receive the information and prevention tools they need. Finally, increased investment is needed to accelerate research on the development of HIV vaccines, especially for viral strains prevalent in highly affected regions.

It may be too late to give Claris a happy childhood, but we can still give her children a happy future – if we face the hard facts and take the right steps, together ■

Patty Stonesifer is Co-chair and President of the Bill & Melinda Gates Foundation, Seattle, Washington, United States.

Whose city is it ANYWAY?

JOCKIN ARPUTHAM suggests how people living in slum environments can escape the cycle of poverty and disease

Poor people in the cities of developing countries live in slums and squatter settlements where such basic amenities as water, sanitation and electricity are absent or inadequate. Their homes are mainly tiny, ramshackle, unfit for human habitation – and prey to the elements. All this has direct implications for public health, promoting illness and disease.

Poor people pay more for essential services than their better-off counterparts. If a slum family has diarrhoea and has to frequent pay-and-use toilets, it can literally see the day's earnings go down the drain. Women in slums often have to buy water at unaffordable rates, or spend long hours collecting it. Electricity is often provided by middlemen charging several times as much as the public utility. All these expenditures for public goods – to which everyone should be entitled – erode the living standards of families already barely able to make ends meet. And when people are ill and cannot work, their incomes are affected and poverty increases. If the main breadwinner dies, the family plummets into economic crisis.

Whose city is it anyway? Political and bureaucratic elites – and the middle classes – depend upon the labour of the urban poor, but see them and their homes as a blight on the landscape, an eyesore to be removed.

Demolition and insecurity

The poor work as refuse collectors, construction labourers, handcart pullers, vegetable vendors, factory workers, domestic servants and so on. They provide goods and services at rates that most of the city's people can afford.

But when it comes to their housing, the city turns its back on them. Planning does not provide enough affordable land. In Mumbai, 55 per cent of the population lives in slums,

occupying only about 8 per cent of the habitable land. Slums are demolished, and slum-dwellers live in deep insecurity. Demolition achieves little, people simply shift from one part of the city to another. Do the policy makers

who fail to recognize this really believe that people will go back to their villages or small towns when they have come to the cities for opportunities that do not exist at home?

Demolition causes the poor to spend on rebuilding their homes, driving them further into poverty. It also affects their incomes. Poor families work in their houses to generate income, but the insecurity prevents them from investing in their tiny businesses, and from improving their conditions of existence.

Herdinand de Soto describes how poor people in the South are unable to mortgage their homes for loans for small business because they do not have clear title to their land. He argues that the capital of the poor exceeds all aid given by the World Bank and other international agencies – but remains unproductive. Attempts to alleviate the poverty of slums and squatter settlements in the South are formulated and implemented by privileged external agents, experts and consultants, international financial institutions, multilateral and bilateral aid agencies and governments at all levels.

A small group of decision makers decides the course of action and there is little consultation with, and barely any participation of, the majority of people affected. Lip service is paid to the concept of people's participation, but grassroots democracy hardly exists in practice. In particular, entrenched patriarchal values keep women confined to domesticity and do not permit them to enter the public world of government and administration.

Reversing trends

How can we reverse these trends? Firstly, by building the capacities of poor people's organizations so that their voice is heard where it matters; secondly, by mobilizing women to enable them to participate actively in public life; and thirdly, by forming strategic alliances with external agencies such as non-governmental organizations (NGOs), governments, mainstream institutions and international agencies.

Policies and programmes will not succeed unless the poor, particularly women, participate in designing and implementing those that affect them. The policies and programmes of the key actors must be influenced to become pro-poor. Roles and relationships must be realigned so that community-based organizations have a much larger say in governance. Only by strengthening such grassroots organizations can political parties and governments be held accountable for their deeds.

City development plans must keep in mind the needs of the poor. Tenure should be secure. There should be no demolition without resettlement. Land and infrastructure should be provided to the poor at affordable rates.

We must create space for hope by building inclusive cities. This will only happen when the urban poor become authors of their own destinies rather than characters in somebody else's manuscript ■

Jockin Arputham, a slum-dweller, is President of India's National Slum Dwellers Federation – a people's organization made up of pavement-dwellers and slum-dwellers from more than 30 towns and cities in India. He is a Magsaysay awardee 2000 for international understanding.



UNEP/Topham



NUTRITION

Richard Jolly

Poor nutrition is implicated in more than half of all child deaths worldwide – a proportion unmatched by any infectious disease since the Black Death. It is intimately linked with poor health and environmental factors. But planners, politicians and economists often fail to realize this. Serious misapprehensions include the following myths.

Myth No. 1: *Malnutrition is primarily a matter of inadequate food intake.* Not so. Food is of course important. But most serious malnutrition is caused by bad sanitation and disease, leading to diarrhoea, especially among young children. Women's status and women's education play a big part in improving nutrition. Improving care of young children is vital.

Myth No. 2: *Improved nutrition is a by-product of other measures of poverty reduction and economic advance. It is not possible to jump-start the process.* Again untrue. Improving nutrition requires focused action by parents and communities, backed by local and national action in health and public services, especially water and sanitation. Thailand has shown that moderate and severe malnutrition can be reduced by 75 per cent or more in a decade by such means.

Myth No 3: *Given scarce resources, broad-based action on nutrition is hardly feasible on a mass scale, especially in poor countries.* Wrong again. In spite of severe economic setbacks, many developing countries have made impressive progress. Over two thirds of the people of developing countries now eat iodized salt, combating the iodine deficiency and anaemia which affect about 3.5 billion people, especially women and children, in some 100 nations. Around 450 million children a year now receive vitamin A capsules, tackling the deficiency that causes blindness and increases child mortality. New ways have been found to promote and support breastfeeding, and breastfeeding rates are being maintained in many countries and increased in some. Mass immunization and promotion of oral rehydration to reduce deaths from diarrhoea have also done much to improve nutrition.

Partly as a result of such measures, the number and percentages of malnourished children have fallen in all regions of the world except sub-Saharan Africa. The United Nations' fourth *Report on the World Nutrition Situation* shows that the number of underweight children under five fell from 175 million in 1980 to 150 million in 2000, with prevalence falling



Dev. News/UNEP/Staff Pictures

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AT A GLANCE

'POVERTY', Indira Gandhi told the seminal 1972 United Nations Conference on the Human Environment in Stockholm, 'is the worst form of pollution'.

Her words came as a shock at the time, particularly to industrialized countries mainly concentrating on the emissions that were a by-product of affluence. But their truth has become ever more evident as the years have gone by.

All over the world, the poor suffer most from environmental damage. They account for an overwhelming proportion of the toll of disease and death from pollution, and are by far the greatest victims of the degradation of the natural world. They live nearest to polluting factories and toxic waste sites; they are the most affected by desertification and deforestation; and they are expected to suffer disproportionately from the effects of global warming.

And yet the poor contribute relatively little to pollution and climate change: by far the greatest contribution comes from the rich. And though the poor often act as the direct agents of the overuse of soils or the felling of forests, they are usually forced to do so by their poverty and their unequal access to land. This sets up a downward spiral, as the poor are impelled to destroy the natural resources on which they depend, thus deepening their poverty. Rising affluence and growing poverty thus both wreak great damage on the planet; in both cases the poor are the main victims. A more equitable world would be a more environmentally sustainable one, and vice versa. Thus, to complete Mrs. Gandhi's thought, eliminating poverty would be one of the best forms of environmental protection ■

Geoffrey Lean

More than four out of every five of the 3 million people who die as a result of air pollution each year are among the poorest people on Earth. And, paradoxically, the great majority of them live not in polluted towns and cities, but in the countryside. They are victims of one of the deadliest, but least publicised, of all environmental hazards – indoor air pollution by smoke from burning dung, wood and crop wastes. The smoke fills houses with hundreds of toxic chemicals, exposing the young and the elderly, as well as the fit, to the danger. Every year some 2 million people – 1.8 million of them in rural areas – die as a result.



Dirty water is the world's deadliest pollutant. According to the World Bank, every year some 3 million people – the majority of them children – die as a result of diarrhoeal diseases. Again, much the greatest toll is among the poor in developing countries. Great progress has been made since the early 1980s; some 2 billion people in developing countries have got safe drinking water for the first time; some 400 million have gained basic sanitation. Yet often the poorest people have not benefited. As a result more than a billion still lack safe or sufficient supplies of water, and more than 2 billion have no sanitation.



Ken Gibson/Soll Pictures

Pesticides often present a major hazard for poor farmers and farmworkers, who lack protective clothing and training in how to use the chemicals, and who often cannot read the instructions. Some 25 million are thought to be poisoned by pesticides each year; hundreds of thousands die.



Lead in petrol – banned in most developed nations, and overwhelmingly now used in developing ones – threatens children's brains. Studies in some developing country cities have found that most children under two have concentrations of the toxic metal high enough to damage their mental ability. The poorest – often already suffering damage from malnutrition and frequently living by the sides of busy roads – are particularly vulnerable.



Julia Exner/Reportage/Soll Pictures



In developed and developing countries alike, poor people are usually most at risk from polluting industries and roads, waste sites, and other hazards since they live nearest to them. In Los Angeles over 71 per cent of African Americans live in highly polluted areas, compared to just 24 per cent of whites, while in big cities in the United States black children are three times as likely as white ones to have hazardous levels of lead in their blood. In Britain, 86 per cent of those disabled by asthma are from the lowest social classes. And in India the toll of the Bhopal disaster was greatly magnified because a shanty town began just 5 metres from the factory's boundary.

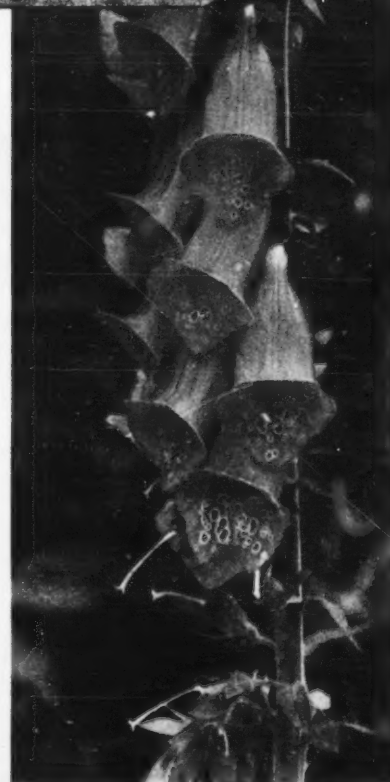


Desertification threatens the livelihoods of a billion of the poorest people on Earth. Almost half of the world's poorest people already live on marginal lands and they are being pushed onto ever more fragile land as more and more good soil is used for cash crops, setting up a vicious circle of desertification and poverty.



Global warming is also expected to hit the poorest hardest, increasing inequalities. Many models suggest that areas with little rain already – where many of the poorest live – will in future get even less. Harvests are expected to be particularly badly hit, and water shortages will increase in many developing countries in Asia, Africa and Latin America. Poor people living on land vulnerable to flooding are likely to be the first to suffer from sea-level rise; a 1 metre rise is projected to inundate 17 per cent of Bangladesh.

Poor people depend on the world's natural biodiversity for food, fuel and medicine; some 3 billion people, half the population of the world, rely primarily on traditional medicine to cure their ills. So the loss of biodiversity – as forests are felled, wetlands drained and other habitats destroyed – hits them particularly hard.



Continued
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from 37 per cent to 27 per cent. Over the same period, the number of nutritionally stunted children fell from 220 to 182 million with the percentage down from 47 to 33 per cent. Even more impressive, this progress has been made in many countries where economic difficulties have been very severe.

Three important conclusions follow:

- Accelerated nutritional progress is possible, even in poor countries and at difficult times.
- Nutritional progress needs conscious strategy and action, embracing a broad range of initiatives tailored to each country.
- National nutritional councils – as found in Norway and a dozen other countries – are needed to give a focus for action, to fine-tune the agenda to the specifics of each country and to act as watchdogs. They are needed in developed countries, where obesity is rising rapidly, just as much as in developing ones.

Poor nutrition has life-long consequences, especially when undernutrition among children is followed by obesity in middle age, as is increasingly common in South Asia. Research over the last decade has shown that heart disease and diabetes among people aged 60-70 is closely correlated with maternal malnutrition in the womb and during the first one or two years of life. A nutritional focus on women and on children, both in the womb and in the first year or two of life, is thus the starting point for what should be a lifecycle approach to ending malnutrition.

Putting an end to the extremes of malnutrition would lay the foundations for the improved health and well-being of the present generation and lead to benefits extending to future generations over the 21st century. Nutrition is the true foundation for sustainable poverty reduction. Yet it is still neglected.

It is time to spread a broader awareness of the worldwide challenges of nutrition – and its linkages with health and sustainable development – and of the new opportunities for making progress on a global scale ■

Sir Richard Jolly, formerly chair of the United Nations ACC/SCN Forum for Nutrition and Deputy Executive Director of UNICEF.



Liam Bick/Land/UNEP/Toplum

Win a copy of UNEP's Sustainable Sport Management

Answer these three questions (you can find all the answers in this issue of *Our Planet*) and tell us in not more than 15 words what you believe is the most important way to alleviate poverty and improve health.

1. Who said 'Poverty is the worst form of pollution'? _____
2. What is the world's deadliest pollutant? _____
3. How many people rely primarily on traditional medicines to cure their ills? _____

Two first prizes of a copy of **UNEP's Sustainable Sport Management**.
Eight runners-up prizes of **UNEP's Focus on Your World** postcard book.

'I believe the most important way to alleviate poverty and improve health is _____

My name _____
Address _____

Entries must be received by SMI, PO Box 119, Pin Green, Stevenage, Hertfordshire SG1 4TP, UK, or poverty@ourplanet.com no later than **7 December 2001**.

The winner and runners up will be chosen by a panel consisting of UNEP's Executive Director, its Director of Information, and the Editor of *Our Planet* from the entries received. The decision of the judges is final. This competition is closed to all those working for UNEP, Banson, KPC Group, SMI and all other companies and organizations associated with the production of *Our Planet* magazine and their families. A full set of rules is available on application from poverty@ourplanet.com



It has long been recognized that the environment in which people live – from the household to the community to the global level – significantly affects their health. Every year in developing countries an estimated 3 million people die prematurely from water-related diseases and 2 million people die from exposure to stove smoke inside their homes. The largest proportion of these deaths are among infants and young children, followed by women, from poor rural families who lack access to safe water, sanitation and modern household fuels. Over 1 million people die annually from vector-borne malaria, with the vast majority of deaths in poverty-stricken Africa. Another million people die from air pollution in the urban environment, and there is a reason to believe that here too the poor suffer most.

Health impacts

Many environmental policies and regulations are motivated by public health concerns. Until recently, however, the magnitude of health impacts from exposure to various environmental risks and the relative contribution of these risks were not known. Recent estimates by Murray and Lopez in *The Global Burden of Disease* (Harvard University Press, 1996) suggest that premature death and illness as a result of major environmental health risks account for a fifth of the disease burden in the developing world. This is comparable to malnutrition and larger than all other preventable risk factors and groups of disease causes. By contrast, such environmental health risks contribute less than 5 per cent of the disease burden in rich countries, despite much higher levels of urbanization, industrial development and energy consumption, which are usually associated with environmental pollution and health problems.

The populations of rich countries also enjoy better general health; the total burden of illness and death from all causes per million people is about half that of developing countries. However, the disease burden from environmental risks is smaller by a factor of ten.

This underscores the basic, although often overlooked, fact that while growth in industry, power generation, transport and other attributes of economic development brings new environmental challenges, the largest environmental threats to human health come from the poor living conditions that result from the lack of development and growth. Environmental health risks, therefore, can be grouped into two broad categories:

■ **Traditional hazards, related to poverty and lack of development, such as lack of safe water, scant sanitation and waste disposal, indoor air pollution, and a wide spread of disease vectors (e.g. malaria).**

■ **Modern hazards, caused by development that lacks environmental safeguards, such as urban (outdoor) air pollution and exposure to agro-industrial chemicals and waste, including occupational exposure.**

Traditional environmental hazards affect developing countries and the poor most. Their impact exceeds that of



Double burden

IAN JOHNSON and KSENIYA LVOVSKY show how the health of the poor suffers most from both traditional and modern environmental hazards

modern health hazards by a ratio of 10 for Africa, 5 for Asian countries (except for China), and 2.5 for the Middle East (see Figure 2). Water-borne diseases, caused by inadequate water supply and sanitation, impose an especially large health burden in the African, Asian and Pacific regions. In India alone, more than 700,000 children under five years old die annually from diarrhoea. More than half of the world's households use unprocessed solid fuels, particularly biomass (crop residues, wood and dung) for cooking and heating in inefficient stoves without proper ventilation, exposing people – mainly poor women and children – to high levels of indoor air pollution (see Box). About half of all these deaths – nearly ▶



1 million – occur in India and China. Vector-borne diseases are affected by a range of environmental conditions and factors, including polluted and standing water; open sewers and certain types of sanitation; clogged storm drains; and floods. In Africa alone, malaria is responsible for about 800,000 deaths annually. A study of environmental health in the Indian state of Andhra Pradesh found that the burden of disease from traditional risks falls disproportionately on the poorest 40 per cent of all households. At the same time, environmental health outcomes show significant variations that cannot be simply explained by a household's economic status, and hence reflect indicators of human development other than income measure alone.

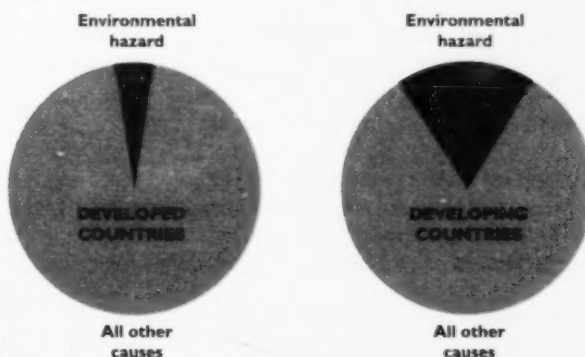
Conversely, modern threats to human health prevail in industrialized countries that have managed drastically to reduce the exposure of their citizens to traditional environmental hazards. More worrying, however, is the fact that the contribution of modern environmental risks to the disease burden in most developing countries is similar to that in rich ones; in quite a few countries it is even greater (see Figure 2). Urban air pollution, for example, hits its highest levels in China, India and in a number of cities in Asia and Latin America.

The urban poor bear the brunt of air pollution because they often live in densely populated neighbourhoods that use dirty household fuels, burn garbage nearby, and are close to traffic corridors or industries. They travel in open vehicles or walk, and spend much more time outdoors. Thus, the world's poor are increasingly experiencing the 'double burden' of both traditional and modern environmental health risks.

Multiple links

Thus environmental health is yet another dimension of the multi-faceted nature of poverty. The links between poor environmental health and other dimensions of poverty are complex and multiple, reinforcing each other in various ways. Poor people typically face greater environmental health risks in their surroundings because they live in unhealthy locations – such as low-lying and marginal lands – and lack basic infrastructure services, like clean water and sanitation. They are more vulnerable because they are less able – as a result of insufficient education and information, daily drudgery and hardship – to adjust their behaviour to

Figure 1: Disease burden due to environmental hazard



Environmental health is yet another dimension of the multi-faceted nature of poverty

moderate their exposure. Additionally, they are the most susceptible to the effects of such exposures because of the simultaneous effect of several factors, such as exposure to indoor smoke and water-borne pathogens, exacerbated by malnutrition and inadequate health care.

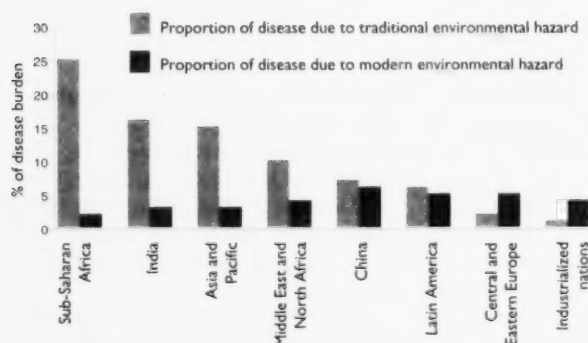
Rapid urbanization and the uncontrolled growth of slums are changing the landscape of environmental health concerns and posing significant new challenges in Africa, Asia and Latin America. They increase the 'double burden' for the urban and semi-urban poor, adding risks from modern transport and industrial pollution to exposures from dirty cooking fuels, primitive stoves, crowding, and poor access to water and sanitation. Malaria is also becoming an urban issue in some parts of the world, partly as a result of infrastructure failures such as inadequate drainage systems. Climate change is likely to worsen this situation, while globalization and the liberalization of trade may exacerbate the transmission of some diseases.

The environmental challenges of development and globalization require concerted action but the much higher environmental health costs of living in poverty and lacking basic infrastructure and other services must not be neglected. The best policies will address both types of health damage in a synergistic manner. Such policies include those that promote strong growth and the structures for good governance and can both safeguard the environment and respond to the needs of the poor. Trade-offs are sometimes inevitable. However, they should be made with a full understanding of the net health impacts that result.

Mitigating risks

Better infrastructure and energy services for households and communities are key measures in mitigating the most daunting environmental risks to health. So are interventions to improve housing and to control vectors, including effective health-care systems and equitable education policies. For example, measures like improved water and sanitation, household energy, housing, vector control and pollution management ►

Figure 2: Disease burden by type of environmental hazard



Lack of modern household energy threatens the health of poor women and children

Biomass is the energy source of the poor. When traditional biomass fuels – mainly wood, straw and dung – burn in simple cooking stoves during the preparation of meals, the air inside homes becomes heavily polluted with toxic smoke. Exposure to this biomass smoke increases the risk of acute respiratory infection (ARI) in children under five years of age.

Children in the Gambia found riding on their mothers' backs as they cooked over smoky stoves were six times more likely to develop ARI than unexposed children. In Nepal, the incidence of moderate and severe cases among two-year-olds increased as they spent greater numbers of hours near the fire. A study in the United Republic of Tanzania found that children younger than five years who died of ARI were almost three times more likely to be sleeping in a room with an open stove than healthy children in the same age group. Studies in South America and India have shown that exposure to indoor air pollution severely reduces lung function in children.

Exposure to high indoor smoke levels is associated with pregnancy-related problems such as stillbirth and low birth weight. Studies in Colombia, India, Mexico, Nepal and Papua New Guinea show that non-smoking women who have cooked on biomass stoves for many years exhibit a higher prevalence of chronic lung disease (asthma and chronic bronchitis) than those who have not. Some 18 per cent of blindness in India is attributed to the use of biomass fuels.

The detrimental health effects of traditional biomass energy go beyond exposure to harmful smoke. In Nepal, rural women are so busy with their daily chores, including spending a disproportionate amount of time collecting fuel, that they are forced to give local beer to their children to keep them quiet. Nepalese women suffer a high incidence of uterine prolapse, probably due to carrying heavy wood loads soon after delivery. In rural areas of India, women are engaged for six hours a day in collecting fuelwood and fodder and in cooking. In some areas, this extreme physical drudgery causes women serious reproductive problems and mental disorders.

Source: Indoor Air Pollution: Energy and Health for the Poor, World Bank/ESMAP Newsletter, Issue No. 1, September 2000; Issue No. 3, February 2001

could prevent up to 29 per cent of the total burden of disease in sub-Saharan Africa. Health sector interventions that target the disease clusters associated with these environmental risks could reduce it by a further 28 per cent. Providing water supplies to rural households has been found to be among the most cost-effective preventive health interventions in India. Reducing modern risks calls for measures to prevent and abate pollution. These, in turn, require setting and enforcing environmental standards, developing a culture of environmental compliance and creating effective incentives.

The resources of governments in developing countries are severely constrained and are beset by a multitude of pressing social needs. To meet these needs it is vital to mobilize private sector investments and initiatives to finance infrastructure and improve the delivery of services in both urban and rural areas, within a sound regulatory framework that includes environmental safeguards.

Holistic approach

The environment-health nexus emphasizes that improvements in people's health require a holistic, multi-sectoral approach to mitigating major risks by integrating cost-effective efforts in infrastructure and human development areas, and by building effective institutions at all levels of governance, including in the communities themselves. A holistic approach is particularly important for improving the health of the poor, who are most vulnerable both to the main environmental hazards and to deficiencies in health service delivery. The World Bank Environment Strategy – developed in extensive consultation with various stakeholders in client countries, other donors and international non-governmental organizations – considers environmental health a top priority and calls for a greater focus on this principal development outcome in Bank operations across all relevant sectors ■

Ian Johnson is Vice President of the World Bank, and Kseniya Lvovsky is Lead Environmental Economist in the World Bank's South Asia Region.



Sylvain Moreau/INP/Topham

It's not just, **pollution**

ROBERT D. BULLARD describes the struggle for environmental justice in the United States and worldwide over the last two decades

Despite significant improvements in environmental protection over the past several decades, billions of people around the world continue to live in unsafe and unhealthy physical environments. The poor are disproportionately at risk.

The environmental justice movement emerged in response to environmental and social inequities, threats to public health, unequal protection, differential enforcement and disparate treatment received by the poor and people of colour. It redefined environmental protection as a basic right.

Equal rights

This grassroots movement has its origins in the United States. However, in just two decades, it has spread across the globe. It embraces the principle that all communities are entitled to equal protection and enforcement of

environmental, health, employment, housing, transportation, and civil rights laws and regulations that have an impact on the quality of life.

It has come a long way since its humble beginning in the predominately rural African American Warren County, North Carolina, where in the early 1980s a hazardous waste landfill ignited protests which resulted in over 500 arrests. The protests provided the impetus for the United States General Accounting Office to conduct an independent investigation. They also led the United Church of Christ Commission for Racial Justice to produce its historic report, *Toxic Waste and Race in the United States*, in 1987. This was the first national study to correlate waste facility sites with demographic characteristics.

The 1991 First National People of Color Environmental Leadership

Summit put environmental justice on the international radar screen. Held in Washington DC, the four-day summit was attended by more than 1,000 grassroots and national leaders from around the world. Delegates came from all 50 states, Puerto Rico, Chile, Mexico, and from as far away as the Marshall Islands. On 27 October, Summit delegates adopted the 17 Principles of Environmental Justice. By June 1992, Spanish and Portuguese translations of these principles were being used and circulated by non-governmental organizations and environmental justice groups at the United Nations Conference on Environment and Development and Global Forum in Rio de Janeiro, Brazil.

Addressing injustice

In response to growing public concern and mounting scientific evidence, on 11 February 1994, the President of the United States issued Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which attempted to address environmental injustice within existing federal civil rights and environmental laws and regulations.

Numerous studies document that the poor in the United States have borne greater health and environmental risks than the society at large. Communities located on the 'wrong side of the tracks' are at special risk from exposure to environmental hazards. Lead paint in older housing is a classic example. Lead poisoning is a preventable disease. Nevertheless, over 1.7 million American children (8.9 per cent of children aged one to five) suffer from it. Over 28.4 per cent of all low-income African American children are lead-poisoned compared to 9.8 per cent of low-income white children.

The recent 'energy crisis' has made low-income and coloured communities vulnerable to the siting of new electric power stations, and to the relaxation of air quality standards for old 'dirty'

Corporate polluters and government operators have created toxic wastelands

power plants. From New York to California, air pollution takes a heavy toll on the health of the poor, who are concentrated in urban areas that are particularly badly affected. Over 57 per cent of whites, 65 per cent of African Americans and 80 per cent of Hispanics live in 437 counties with substandard air quality.

Bad air hurts. It is also costly: the federal Center for Disease Control and Prevention places air pollution-related health costs at \$14 billion a year. Ozone has been associated with rising asthma, allergic and cardio-respiratory disorders and death. Asthma accounts for 10 million missed school days, 1.2 million emergency room visits, 15 million outpatient visits, and 500,000 hospitalizations each year. The asthma hospitalization rate for African Americans and Latinos is three to four times greater than for whites.

Corporate polluters and government operations have created toxic wastelands. The United States military has left a toxic trail from the beaches of Vieques, Puerto Rico, via the Memphis inner city to the Alaskan wilderness. The 1990 book *Dumping in Dixie* chronicled the relationship between the exploitation of land and of people. By default, 'Dixie' – or the Deep South – became a 'sacrifice zone,' a sump for the rest of the nation's toxic waste.

A unique legacy

The region is stuck with a unique legacy of slavery, 'Jim Crow' and white resistance to equal justice for all. Lax enforcement of environmental laws has left its air, water and land the most industry-befouled in the United States. Louisiana's Lower Mississippi River Industrial Corridor typifies this pattern. Environmentalists and local residents dubbed it 'Cancer Alley'. It has over 125 companies manufacturing a range of products including fertilizers, gasoline, paints and plastics. Tax breaks given to polluting industries have created a handful of jobs at a high cost. A 1998 *Time* magazine article reported that in the 1990s, Louisiana wiped \$3.1 billion off the books in property taxes owed by polluting companies. The state's five worst polluters have received \$111 million in tax breaks over the past decade.



D.A. Dobson/UNEP/Topham

Native Americans have to contend with some of the worst pollution in the United States. More than 35 Indian reservations were targeted for landfills, incinerators and radioactive waste facilities in the early 1990s. In 1999, Eastern Navajo reservation residents filed suit with the Nuclear Regulatory

The United States Environmental Protection Agency defines environmental justice as 'the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies'. It continues: 'Fair treatment means that no group of people, including racial, ethnic, or socio-economic groups should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.'

Commission to block a permit for uranium mining in Church Rock and Crown Point, New Mexico. The Mohave tribe in California, Skull Valley Goshutes in Idaho and Western Shoshone in Yucca Mountain, Nevada are all fighting proposals to build radioactive waste dumps on their tribal lands.

Short-term 'remedies'

The generation and movement of hazardous wastes poses important health, environmental, legal, political and ethical dilemmas. Shipping them from rich communities to poor ones is a global problem. Unequal interests and unequal power arrangements have allowed the pollution of the rich to be offered as short-term remedies for the poverty of the poor. Over the last decade numerous developing nations have challenged this 'unwritten policy' of nations belonging to the Organisation for Economic Co-operation and Development of shipping hazardous wastes across their borders.

The poisoning of African-Americans in Louisiana's 'Cancer Alley', of Native Americans on reservations, and of Mexicans in the border towns all have their roots in economic exploitation, racial oppression, devaluation of human life and the natural environment, and corporate greed. Environmental justice advocates want jobs and economic development – but not at the expense of their health and the environment. Their call for environmental and economic justice does not stop at the United States borders but extends to communities and nations around the world that are threatened by hazardous wastes, toxic products, 'dirty' industries and unsustainable development practices. Environmental justice leaders are demanding that no community, region or nation, rich or poor, should be allowed to become a toxic dumping ground ■

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SMOKE AND FIRES

VINOD MISHRA assesses the devastating effects of cooking smoke on poor people in developing countries

Concentrations of health-damaging air pollutants tend to be highest indoors in developing countries, contrary to the common perception that this is primarily an urban phenomenon associated with motor vehicles and industries. A large proportion of developing country households rely on biomass fuels such as wood, animal dung and crop residues for cooking and heating. As a result, some 3.5 billion people, mostly in rural areas, are exposed to high levels of air pollutants in their homes. The World Bank has designated this as one of the four most critical environmental problems in developing countries.

As societies modernize, households move up the 'energy ladder' to cleaner liquid and gaseous fuels and, in some cases, to electricity for cooking. Use of biomass fuels is projected to decline slowly overall, but they will remain the primary source of household energy in much of the developing world for the foreseeable future. According to some estimates, reliance on them may actually have increased recently in some poor areas.

Cooking areas tend to be poorly ventilated in many developing country homes, most of which do not have a separate kitchen. Life revolves around the cooking area and women spend much of their time there. Cooking

stoves are mostly simple – often just a pit or three pieces of brick – and burn biofuels inefficiently. Women and young children especially tend to be exposed to high levels of cooking smoke, far exceeding safe levels recommended by the World Health Organization.

This biomass smoke contains many noxious components, including respirable suspended particulates, carbon monoxide, nitrogen oxides, formaldehyde and polycyclic aromatic hydrocarbons such as benzo(a)pyrene. High exposure can damage the respiratory system, eyes and immune system responses – and make people more susceptible to infection and disease. It has been linked to serious health problems, including tuberculosis, acute respiratory infections, chronic obstructive pulmonary disease, cor pulmonale and lung cancer – and associated with asthma, blindness, anaemia and such adverse pregnancy outcomes as low birth weight and perinatal mortality.

TUBERCULOSIS

Recent research suggests that people living in households that rely primarily on biofuels for cooking are two or three times more likely to have active tuberculosis than those in ones that use cleaner fuels. Cooking smoke can

increase the risk of tuberculosis by reducing resistance to the initial infection or by promoting the development of active tuberculosis in people who are already infected, or both. Pulmonary tuberculosis, the most common form of the disease, is transmitted by coughing, which is increased by the smoke. Benzo(a)pyrene, a known carcinogen, is found in large quantities in cooking smoke, and there is evidence that this can depress immune system responses.

ACUTE RESPIRATORY INFECTIONS

These are the single most important cause of morbidity and mortality worldwide, killing more than 3 million children under five every year and accounting for an estimated 9 per cent of the entire global disease burden. Extended exposure to high levels of biomass smoke can impair the clearing ability of the lungs and render them more susceptible to infection. The effects may be particularly severe for young children, who tend to stay indoors and are often carried on their mothers' backs or laps during cooking.

CHRONIC OBSTRUCTIVE PULMONARY DISEASE

Repeated or severe childhood chest infections can also lead to chronic lung diseases in adulthood. A number of studies have reported an association between exposure to biomass smoke and chronic bronchitis or obstructive lung disease.

ASTHMA

Smoke is more likely to aggravate asthma, triggering an attack, than to cause it in the first place. However, repeated attacks due to smoke exposure may leave the person more vulnerable to lower doses and increase the severity of attacks. Exposure to fine particulate

matter in smoke has been linked with increased symptoms of asthma and visits to emergency rooms. Evidence of the role of cooking smoke in causing asthma is mixed, but it has some of the same pollutants that are found in ambient air pollution or tobacco smoke, both of which have been linked with the disease.

ANAEMIA AND ADVERSE PREGNANCY OUTCOMES

Smoke from burning biomass contains large quantities of carbon monoxide (CO), which can bind with haemoglobin in the blood to make carboxyhaemoglobin (HbCO), effectively reducing the amount of oxygen reaching the body tissues and causing anaemia. This is particularly important for women because they have less haemoglobin in reserve than men, and because their natural levels of HbCO are greatly elevated during pregnancy. Women also do most of the cooking and so are the most exposed to CO. There are no empirical studies linking cooking smoke to anaemia, but there is some evidence that links it to reduced foetal growth, low birth weight and perinatal mortality.

CATARACT AND BLINDNESS

Cataract – the main proximate cause of complete blindness worldwide – is known to be linked to damage to the eye that can be produced by heavy airborne pollution, among other factors. A number of studies in humans indicate that tobacco smoke can cause cataract, suggesting that cooking smoke might have a similar effect, though the research is limited. Trachoma and conjunctivitis, which also cause blindness, could be aggravated by smoke as well.

LUNG CANCER

Cooking smoke, like tobacco smoke, contains many polycyclic aromatic hydrocarbons, such as benzo(a)pyrene, which can cause cancers. Empirical research has shown an association between exposure to coal smoke and lung cancer, but the evidence linking biomass smoke to lung cancer is limited. Exposure to biomass smoke has also been linked to nasopharyngeal

and laryngeal cancers, otitis media (middle ear infection) in children, and cor pulmonale.

There is enough evidence to suggest that cooking smoke has many serious health effects, even though its role in epidemiological transition is not fully understood. By one recent estimate, burning solid household fuels accounts for some 2.5 million premature deaths every year – about 6-7 per cent of the global disease burden, considerably more than that due to ambient urban air pollution.

Overall, some estimates suggest that as much as 25-33 per cent of the global disease burden can be attributed to environmental risk factors. A recent study puts use of unprocessed solid fuels for cooking and heating as the third largest of these, after malnutrition and water/hygiene/sanitation, in causing disability and death in developing countries.

The choice is clear. Millions of lives can be saved and much ill health avoided in developing countries by reducing indoor air pollution levels caused by smoke from cooking and heating. Perhaps the most obvious long-term policy option is to promote a shift from biomass fuels to cleaner ones. Others include promoting better housing and changing behaviour through education programmes about the ill effects of exposure to cooking smoke.

In the short term, however, the lack of availability of alternative fuels and infrastructure – and of people's ability to pay – may make a shift from biofuels unfeasible. A more practical policy would be to promote improved cooking stoves. Inexpensive biomass-burning stoves that are fuel-efficient, less smoky, and equipped with flues or hoods designed to prevent the release of pollutants indoors, should be made available. But there will have to be an affordable and sustainable approach which gives high priority to local needs and community participation if such a programme is to be effective ■

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There will have to be an affordable and sustainable approach which gives high priority to local needs and community participation



Breaking the cycle of poison

SAROJENI V. RENGAM reports how excessive pesticide use traps farmers in poverty, and outlines some solutions

More than 300 farmers committed suicide in 1997 and 1998 in Andhra Pradesh, India, and more cases have been reported in recent years. Farmers in the area had shifted from food crops to commercial ones such as cotton and chillies, and had to borrow heavily to buy high-yielding varieties of seeds, chemical fertilizers and pesticides. Unfortunately, the massive spraying of the fields with pesticides created an ecological crisis, killing off the pests' natural enemies and causing them to become resistant to the chemicals.

The resulting resurgence of pests forced farmers to use cocktails of pesticides, but this only exacerbated the problem and led to repeated crop failures. These, together with the increasing costs of pesticides and other inputs, forced farmers into a cycle of debt. So once these small farmers bought into this Green Revolution technology, they were trapped.

Unable to bear the consequences, the men committed suicide, leaving the burden of the debts to their wives and families who face increasingly unbearable workloads and depressing poverty as they struggle to settle them. And most surviving small and marginal farmers – not just in Andhra Pradesh, but in Asia as a whole – face such an accumulation of debt as a result of switching to Green Revolution technology. The Asian NGO Coalition has established that 4.3 million farming families in Thailand were buried in debt just a few years after adopting high-yielding varieties.

Some 25 million farmers and agricultural workers are poisoned by pesticides each year. A Pesticide Action Network (PAN) Asia and the Pacific study of pesticide use and exposure patterns in seven countries revealed a litany of problems including poorly educated and impoverished farmers applying pesticides without any training or protective clothing.

Absence of safeguards

The use of highly dangerous pesticides – including World Health Organization Class I pesticides categorized as 'extremely hazardous', such as methyl parathion, monocrotophos and methamidophos – is common. There is very little knowledge of their dangers. Measures to restrict re-entry into a sprayed field for a number of hours are difficult to enforce. There is a shortage of facilities for washing after use, or for coping with accidents. In Cambodia,

one methyl parathion product carries labels in Thai, rather than the Khmer language, so farmers are unable to read the instructions for use or any warnings they carry. Farmers frequently store pesticides in their kitchens, under beds and within easy reach of children. Pesticide containers are reused for water collection or storage. Farmers and agricultural labourers complain of headaches, dizziness, vomiting, nausea, difficulty in breathing, chronic itching, nails turning black and dropping off, sensitivity to light and even unconsciousness. A study in Indonesia observed that farmers averaged three or more neurological, intestinal or respiratory symptoms of poisoning in 21 per cent of the studied spraying operations.

Community action

PAN International campaigns against pesticide use and for more ecological pest management. In many regions, including Asia and the Pacific, it has initiated community health monitoring, participatory action research and local surveys to document the impact of pesticides on farmers and agricultural workers. As a result groups are working towards empowering women, farmers and workers to address and campaign against hazardous pesticides, to reduce their exposure to them and to promote non-chemical alternatives.

A quiet revolution is now taking place in Asia. The Ecological Agriculture Movement looks at agriculture as a holistic system, where other key concerns besides yield increases are considered in making decisions about development. Most emphasis is placed on food security in a framework encompassing production, environment, women's participation and democracy. Such ecological agriculture systems tend to learn from, and build on, traditional farming using local farmers' tools and technology.

Today 55,000 farmers in Bangladesh are practising ecological agriculture within the Nayakrishi Andolan (New Agricultural) movement. More than 10,000 farmers in India are practising low external input agriculture without the use of pesticides, while in one NGO programme in Indonesia, more than 7,000 farmers have been reducing pesticide use by 60-80 per cent through integrated pest management ■

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The health policies of most developing countries have often favoured adopting and developing the modern medical system while tolerating, belittling, neglecting or abandoning existing traditional systems. Meanwhile local communities are denied the use of biodiversity in the name of conservation. The results of such policies have been a net loss both to health and economies, and the inability of poor countries to meet their needs for health care satisfactorily.

The cost of the modern medical system is beyond most countries: its services only reach the few who can afford them. Most people cannot pay the high costs of medicines and treatments. Non-affordability leads to non-accessibility and thus non-availability. Any system which provides a service that is not affordable and therefore not accessible and not available can never claim to be effective and efficient.

Poor but rich

About four fifths of the world's population now live in developing countries, which though economically poor are often rich in biodiversity. Most of their governments spend around \$10 per person per year on health care. At least 1.3 billion people in developing countries try to make ends meet on less than a dollar a day. The World Health Organization estimates that about 80 per cent of the world's people rely on herbal medicines (and thus biodiversity) at least to some extent.

Despite all this, governments, policy makers, health authorities and administrators, modern medical personnel, scientists and conservationists all misunderstand the importance of biodiversity to the health of people, especially the poor.

The relationships between humans and the biodiversity around them are manifest in local traditional knowledge and in the uses to which different people of diverse cultures put it in such areas as health, nutrition, energy, shelter, tools, transport, entertainment, religion and cultural identity.

The use of biodiversity is a fundamental link between people and



Malcolm Watson/Still Pictures

Pharmacies for life

NAT QUANSAH says that the sustainable use of biodiversity offers the best hope of meeting the health needs of the poor

the environment. It does not denote primitiveness, as some would want us to believe. Everyone uses it in one form or another; it just happens that people of the biodiversity-rich but economically poor countries often have easier access to biodiversity in its real (basic or original) state. They use it to meet their health care needs because it is accessible and often effective, and because they cannot

afford the services provided by the official medical system.

Rather than seeking to understand why these people employ this strategy, we (the 'educated' lot) tend to belittle, ignore and neglect it and suggest procedures and activities that are alien to them. But only when we understand an issue can we come up with the appropriate solution.

It is in listening that we hear, in ►

hearing that we know, and in knowing that we understand. Listening is thus a vital key to understanding – not the passive listening that we do with only the ears and do not follow up, but listening with all the senses, the whole being. Such active listening enables us to understand and act accordingly. It always manifests itself in action.

Reflecting reality

If health policies and strategies are not achieving their goal, then new and appropriate ways must be sought. There must be a re-think – and re-act – to enable people's health care needs to be met more effectively and efficiently. Rather than adopting the modern medical system wholesale, it must be adapted to complement existing local systems. It is necessary to reflect the realities of countries rich in biodiversity but poor economically by first meeting their health care needs with their biodiversity before resorting to external resources such as pharmaceutical products.

Integrated health care

A pilot programme in the village of Ambodisakoana, northwest Madagascar, from late 1993 to the end of 1997 showed that this approach is both feasible and viable. The Clinique de Manongarivo was based on the integrated health care system approach to providing health care and conserving biological and cultural (biocultural) diversity. This consciously targets and harnesses people's links with biodiversity, in order simultaneously to meet their health, economic and biocultural diversity conservation needs, and those of their areas. It manages the similarities and differences within the diversity of the material and human resources of the medical systems available in a complementary and sustainable manner.

The pilot programme resulted in the sustainable use of local biodiversity.

It is in listening that we hear, in hearing that we know, and in knowing that we understand

Examples of diseases or medical cases effectively treated using local medicinal plants only

ATHLETE'S FOOT
ABSCESS
DYSMENORRHOEA
ASTHMA
BURNS
DYSENTERY
DYSURIA
FEVER
HERPES
STOMACH ULCER
FATIGUE (GENERAL)
HYPERTENSION
SCABIES
INTESTINAL WORMS
MOTION (TRAVEL) SICKNESS

Three treatment protocols were established and applied in the clinic: treating diseases using biodiversity (medicinal plants) only; using pharmaceutical products only; and using the two in combination. Twenty-eight of the 36 different diseases or medical cases encountered in the area were treated effectively by local medicinal plants alone (for examples see box), two by pharmaceutical products, and the other six by the combination.

Appropriate plants and plant parts were selected to treat diseases effectively. Laboratory investigations resulted in, for example, using the leaves of a *Bursera* sp. for the treatment of fever, instead of its roots, which had been used by the traditional medical practitioner and the community. Similarly, the oil extracted from the fruit of a *Mauloutchia* sp. was used to treat toothache, instead of the bark. Thirty different species of medicinal plants were selected and cultivated in the clinic's garden, thus helping to take undue pressure off some of those growing wild in the area.

The use of local biodiversity – which is often free and, at worst, five to ten times cheaper than the pharmaceutical products – enabled patients at the clinic to save money. To give a few examples, they saved around \$5 by using ginger for the care of their

motion (travel) sickness; \$7 by using a *Croton* sp. to treat diarrhoea; up to \$20 by using an *Erythroxylum* sp. for asthma; and around \$35 by using a *Mauloutchia* sp. for herpes.

(Pharmaceutical products are usually three to four times more expensive in rural areas than in urban centres and are often more difficult to find.)

The savings made it possible for them to afford the pharmaceutical products needed for the diseases that had no effective local biodiversity remedy. The money saved was also used to help meet other family needs, such as paying for the cost of a child's education or improving the diet.

Mutual benefits

Reinforcing the life-saving value of biodiversity through using local plants for local health needs made it easier to evoke people's willingness to help it. They felt obliged to save it because they depended on it for survival. Continually and sustainably using medicinal plants prevented both biodiversity and culture disappearing.

The target of 'Health for All by the Year 2000' never became a reality. But adapting the modern medical system to complement existing local ones – while reinforcing the relationship between humans and nature – through using biodiversity, could provide a way forward.

If adapted and applied, it would be a better way to meet health care needs cost-effectively. It would also provide a basis for solving some of the poor countries' economic and biocultural diversity conservation needs. It minimizes waste while maximizing benefits. And it clearly manifests the pillars of health care service provision: affordability, accessibility, availability, effectiveness, efficiency and cultural acceptability.

Indeed, until the diversity in nature is harnessed to work for the good of humanity and the environment, attaining health for all will forever remain rhetoric rather than reality ■

Dr. Nat Quansah is an ethnobotanist and independent researcher based in Madagascar, and recipient of the 2000 Goldman Environmental Prize for Island Nations.

Change – or decay

CHARLES SECRETT argues that Northern green groups must break out of their 'white, middle-class ghettos' to address the inequalities that drive environmental destruction

The World Summit on Sustainable Development – Earth Summit 3 – is less than a year away. Global environmental problems such as greenhouse gas emissions, ocean plunder, the loss of old growth and primary forests, and wasted resources, lurch from bad to worse. The rich and powerful get richer and more powerful; the poor get poorer and weaker. Sustainable development looks good on paper, but in reality is little more than a tongue-twisting chimera. The environment movement worldwide needs to ask whether it is time to evolve to succeed.

The honest answer is: yes. The movement lacks the political strength to reverse these trends. The United States has the oldest, wealthiest and most diverse environment movement of any country. Most of its citizens believe that climate change is real, and that the United States must act to curb its emissions. Yet the combined might of the World Resources Institute, Sierra Club, National Resources Defence Council, Environmental Defence Fund, WWF, Greenpeace, Friends of the Earth and more could not prevent the United States greatly increasing its emissions of greenhouse gases in the 1990s and then rejecting the Kyoto Protocol this year.

Shifting battle lines

A power struggle lies at the heart of every significant environmental choice, from energy use to forest or fisheries management to resource consumption. Who gains? Who loses? Who controls? Who profits? The battle lines shift ceaselessly between communities, companies and countries; between those who demand reform and those who defend the status quo. On the global stage, Southern countries are determined to secure the political authority and economic resources to meet their development needs. Northern

nations are equally adamant about holding on to what they have got. It is inequalities between and within nations – the inequalities of political decision-making, of economic resource use, of standards of living – which environmental groups must convincingly address. These are the motors of environmental degradation and unsustainable development patterns.

Governments predominately believe that conservation undermines and competes with development, whatever lip-service they pay to policy integration and sustainability theory. Their overwhelming priority is to generate wealth to maintain standards of living for the middle classes and to pull people out of poverty. Tax regimes, subsidies and regulation are geared for economic growth and market share – not for future generations or environmental protection.

Soft issues

Most green non-governmental organizations (NGOs) are ill equipped for this arena, unless they reposition themselves, their agenda and strategies. Since the birth of the movement in the white, affluent middle-class communities of the United States and Europe in the 1960s, distinct strands of green NGOs have emerged. There are conservation groups, like WWF, whose identity is marked by education, fundraising and lobbying for endangered species protection. There are the animal welfare groups, like the International Fund for Animal Welfare, who adopt a similar approach. Environmental groups like Greenpeace are known for a broader sectoral analysis (energy, transport, chemicals and so on), and choose from a range of campaign tactics, including peaceful direct action. One or two groups, like Friends of the Earth, have become sustainability campaigners, intent on securing social justice and greater



UNEP/Topham



Hemendra A. Shaw/UNEP/Topham



J. Balanhadre/UNEP/Topham



Chris Heller/UNEP/Soil Pictures

economic welfare through environmental improvement, mainly using political action and media exposure.

The great majority of so-called environmental organizations, including nearly all the mass membership groups, are preoccupied with nature conservation and animal welfare priorities. Development and poverty are for other organizations entirely, organizations such as Oxfam, the World Development Movement and Christian Aid in the United Kingdom. This is the movement's political weakness. Soft issues define their positioning, public support and influence.

The Royal Society for the Protection of Birds is the United Kingdom's largest green NGO, with over a million members. It does excellent conservation work. Its staff are expert, and produce authoritative policy papers on hard ►

sustainability issues like resource equity, fair trade, fiscal reform and poverty reduction. But that is not where its reputation, appeal or strategic impact lie. It is about birds and their habitats. When government considers energy or global trade options, for example, officials and parliamentary committees reflect the society's position papers. But those million-plus armchair supporters are not the same as 1 million agitated constituents, and ministers know it.

Politicians respond quickest to those who can hurt or help them where it counts: in editorial columns, opinion polls and ballot boxes. NGOs who dance with policy makers down the corridors of power, or placard with passion but little strategic intent outside closed-door summits and boardrooms, cut little ice. Right now, winning the occasional incremental green policy improvement is about as useful as changing the colour of the curtains while the house burns down.

Wasted energy

Fifteen years of bitter climate negotiations would surely have concluded sooner if other international organizations had, alongside Friends of the Earth and the Global Commons Institute, incorporated equity and fair resource share considerations into their campaigns from day one. Southern nations were wary because they saw environmental constraints as the latest incarnation of industrial country imperialism. While the emissions of Northern countries rose, despite their obligation to cut back first, promises made in flows and technology transfers to help poor nations modernize their economies were broken. Northern NGOs banging on about global environmental limits and wildlife habitats at risk only aggravated the situation.

Earth Summit 3 will not resolve other substantive environment-development conflicts, such as forest management, ocean use, mineral access

or water conservation, until decisions are based on fairly sharing the Earth's resources, with each economy strategically reducing environmental impacts to match ecosystem tolerances. The challenge for the global environment movement is to reorganize itself in order to generate popular demand for fundamental reforms. There are three immediate priorities.

● First, green groups need to find common cause with other movements. Multi-issue global coalitions, linking environmentalists, poverty campaigners, subsistence farmers and others, have successfully blocked global free trade proposals like the Multi-lateral Agreement on Investment or the World Trade Organization's new round in Seattle. By working with progressive governments, we have generated the political will to stop industrial nations and global corporations bulldozing through treaties which ignore environmental and poverty priorities.

● Second, mainstream NGOs must reconnect with grassroots activists. The energy of anti-globalization campaigners and the mass citizen support for the global 'Drop the Debt' campaign are admirable models. This is particularly critical in the United States, where long years of lobbying on Capitol Hill have atrophied the campaign muscle, activist support and strategic sense of the environmental establishment. The dynamism of peaceful direct action and green community politics is alive and kicking in the United States. But the Ruckus Society and Earth First just do not relate to highly paid lobbyists, no matter whose side they are on.

● Third, the green agenda must encompass environmental rights, environmental justice and environmental economic modernization. It is the poor who suffer the worst effects of pollution, resource waste and deteriorating environmental quality. They cannot buy their way out of trouble. Their needs must be met. It is time that environmentalists broke out of their white, middle-class ghettos. The mixed race, community-based environmental justice movement in



the United States and Friends of the Earth in the United Kingdom (www.foe.co.uk/factorywatch) show what is possible.

Sustainable development is about meeting the needs of all people, now and in the future, while ensuring the biosphere can maintain itself and the diversity of life. By addressing its own weaknesses, the environment movement can play a vital catalytic role in transforming the economic and political world order to realize the tangible dream ■

Charles Secrett is Director, Friends of the Earth (England, Wales and Northern Ireland).

Green groups need to find common cause with other groups



WORLD ATLAS OF CORAL REEFS

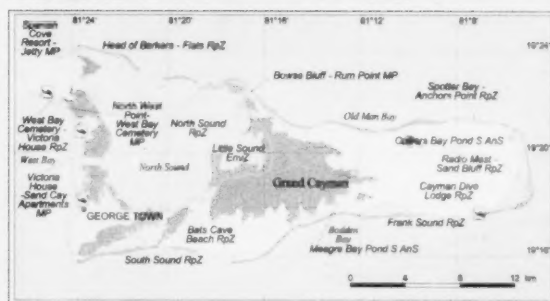
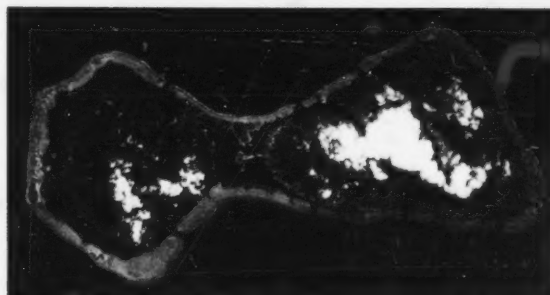
Coral reefs are among the oldest and most biologically diverse ecosystems on Earth. Often referred to as the 'rainforests of the oceans', they originally emerged more than 200 million years ago. Some types of corals living today evolved over 150 million years ago. These beautiful habitats host an extraordinary variety of marine plants and animals – a mere 100,000 species have been named and described out of estimated numbers of between 500,000 and 2 million.

Reefs have also become known as the world's 'miner's canary' because of their extreme sensitivity to small changes in their surroundings. The growth of mass-tourism, combined with the boom in popularity of scuba diving, has brought their plight to public attention across the planet.

Coral reefs provide essential fish habitat, support endangered and threatened species, and harbour protected marine mammals and turtles. They are a significant source of food for hundreds of millions of people, provide income and employment through tourism and marine recreation, and offer countless other benefits to humans, including supplying compounds for pharmaceuticals and protecting vulnerable coastlines from wave action and storms.

Yet coral reefs around the world are being degraded by a number of human activities including overfishing and blast-fishing, coastal development, and land-based run-off of sewage, fertilizers and sediments washed from deforested lands.

The **World Atlas of Coral Reefs** provides a detailed and definitive account of their current status; their geography and biodiversity; as well as human uses of coral reefs and details of the threats to their existence. This wealth of authoritative and up-to-date information is accompanied by 85 full-page meticulously researched colour maps and more than 200 colour photographs



illustrating reefs, reef animals and images taken by NASA astronauts on recent space shuttles. The book also provides figures on a country-by-country basis of the extent of the world's reefs, which of them are under threat, and which are seriously endangered. The full-colour **World Atlas of Coral Reefs** will be a crucial resource for anyone interested in these fragile environments.

Prepared at the UNEP-World Conservation Monitoring Centre in Cambridge, United Kingdom – UNEP's office responsible for providing authoritative information on the condition of global biodiversity – the *Atlas* is a critical tool for scientists, students, policy makers and planners at local, national and international levels alike. Its authors and cartographer, Dr. Mark Spalding, Corinna Ravilious and Dr. Edmund Green, have provided a benchmark for the international conservation initiatives on reefs at risk around the world ■

World Atlas of Coral Reefs, supported by ICLARM, NASA, Aventis Foundation, PADI, Marine Aquarium Council, ICRI, and the Dulverton and Moore Family Foundations is published by University of California Press (ISBN 0-520-23255-0) at \$45.00. To order a copy go to:
<http://www.ucpress.edu/books/pages/9635.html>



Sauvons notre ciel • La terre sans la couche d'ozone est comme une maison sans toit



Save Our Sky



The Earth
without the
Ozone Layer
is like a House
Without a Roof *

* Warning

- Our Earth**
- Is protected by a thin Ozone layer which filters out harmful UV rays
 - Ozone depletion
 - Destroys life on earth
 - Is dangerous to your health
 - Causes skin cancer and eye diseases

**Save
Our
Sky**
Be Ozone
Friendly

Web sites: <http://www.unep.org/ozone/>
<http://www.unepie.org/ozonaction.html>

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Спасем наше небо • Земля без озонового слоя - как дом без крыши

نقشوا سماحنا • ان الأرض بدون طبقة الأوزون

Salvemos nuestro cielo • La Tierra sin la capa de ozono es como una casa sin techo

地球の屋根を失った家